



Shell Oil Company • Shell Chemical Company

Interoffice Memorandum

423
True
Silica

PLAINTIFF'S EXHIBIT

SH-892

SEPTEMBER 26, 1985

FROM: J.E. BARTON - INDUSTRIAL HYGIENE ASSISTANT
DEER PARK MANUFACTURING COMPLEX

TO: B. DAVIS - EMPLOYMENT
DEER PARK MANUFACTURING COMPLEX

SUBJECT: SILICA SANDBLASTING

Attached for your information are four letters addressing the issues of silica sandblasting at DPMC.

March 18, 1980 appears to be the date of implementing a substitution program for silica (see memos from R.P. Frutiger and J.D. Ransdell).

The July 13, 1978 letter outlines a recommended exposure prevention program which may be of relevance to the time period of concern.

For further reference, the October 2, 1984 letter represents current Industrial Hygiene recommendations regarding silica sandblasting at DPMC.

Please let me know if I can be of further assistance.

J.E. Barton
J.E. Barton

JEB/md

Attachments

cc: P.J. Snyder
ECB Satellite
JEB Chron

LAM 016398



Shell Oil Company • Shell Chemical Company
Interoffice Memorandum

MARCH 18, 1980

FROM: R. P. FRUTIGER
TO: D. O. CHRISMER, J. G. MASSEY
SUBJECT: SILICA

During the past two(2) years, Industrial Hygiene has continued their effort to assess the potential exposure resulting from sandblasting activities. The monitoring results show that although the abrasive blaster can be protected with an air-supplied hood, concentrations of free silica as far as 50-100 feet downwind of the work area can exceed the OSHA limits. Since inhalation of free-silica from sandblasting can produce chronic and progressive lung damage, elimination of the use of free-silica sand for sandblasting has been an objective.

Several substitute materials (free of silica and less toxic) have been found by the maintenance organizations and are currently being used by Shell and several of the maintenance contractors. The most commonly used substitute abrasive is Apache Blast(R). This material is primarily oxides of iron, silicon, aluminum, and calcium and contains less than 1 percent free silica. As a result of the substitution program, it is now practical to establish the following guidelines for managing our sandblasting activities in a healthful manner:

- Substitute abrasives (such as Apache-Blast or others approved by Maintenance and Safety and Industrial Hygiene) for sand shall be used:
 - (1) at the Maintenance North yard and at the Sline yard (the rabbit patch)
 - (2) in all operating areas (including tank farms) to avoid general exposure to other personnel

LAM 016399

Use of substitute abrasives is optional in areas that are remote from operating areas (e.g. greenbelt areas) providing the proper warning signs are posted and personnel in the immediate area use an approved respirator.

At times, the supply of substitutes for silica sand have been inadequate. Where work cannot be delayed until a substitute material is available, silica sand may be used providing the following requirements are met:

DPMC-13144

- (1) All sand blasters must wear NIOSH approved air-supplied hoods.
- (2) Warning signs must be placed around the work area and at least 100 feet downwind to prevent exposure of unauthorized personnel.
- (3) Personnel in the perimeter shall wear respiratory protection at all times while sandblasting is in progress. A NIOSH-approved dust mask or air-supplied hood must be used by those not directly doing the blasting.
- (4) Only authorized personnel with respirators should enter the restricted area.

We hope the above guidelines will help us manage our sandblasting activities in an effective manner. Please let me know if you have any questions.


R. P. Frutiger

cc: R. L. Brunner-One Shell Plaza
G. C. Anderson
M. T. Anderson
J. K. Bagley
J. D. Ransdell/M. E. Davison
F. G. Reitz
R. H. Slaughter
R. J. Swofford

RPF:ikg

LAM 016400

DPMC-13145



Shell Oil Company • Shell Chemical Company
Interoffice Memorandum

MARCH 18, 1980

FROM: SENIOR INDUSTRIAL HYGIENIST
TO: SUPERINTENDENT SAFETY AND INDUSTRIAL HYGIENE
SUBJECT: SANDBLAST MATERIALS

Over the past few years, the Maintenance organizations have been able to phase out the use of sand for abrasive blasting. Since inhalation of free-silica from sandblasting can produce chronic, progressive lung damage, elimination of sandblasting was desirable. Industrial Hygiene surveys had shown that although the abrasive blaster could be protected with an air-supplied hood, concentrations of free silica could exceed OSHA limits as far as 50-100 feet downwind of the work. It was because of the potential health effect that a medical examination program was started in 1978 for Shell sandblasters. That program will continue.

Several substitute materials (free of silica and less toxic) have been successfully used by Shell and several of the maintenance contractors. The most generally used substitute abrasive is Apache-Blast^R. This material is primarily oxides of iron, silicon, aluminum and calcium and contains less than 1% free silica. As a result of the substitution program, it is now practical and desirable to limit sandblasting according to the following guidelines.

- substitute abrasives (such as Apache-Blast^R or others approved by Maintenance and Safety and Industrial Hygiene) for sand shall be used:

- (1) at the Maintenance North yard and at the Sline yard (the rabbit patch)
- (2) in all operating areas (including tank farms) to avoid general exposure to other personnel

LAM 016401

Use of substitute abrasives is optional in areas that are remote from operating areas (e.g. greenbelt areas).

At times, the supply of substitute material has been inadequate. Sand may be used in place of the substitute if the work cannot be delayed until substitute material becomes available. Industrial Hygiene should be notified of such situations.

Whenever sand is used for abrasive blasting, the following requirements are in effect:

- (1) All sand blasters must wear NIOSH approved air-supplied hoods.

DPMC-13146

- (2) Warning signs must be placed around the perimeter of the work. The perimeter should extend far enough out to prevent exposure to unauthorized personnel.
- (3) Personnel in the perimeter shall wear respiratory protection at all times while sandblasting. A NIOSH-approved dust mask or air-supplied hood must be used by those not directly doing the blasting.
- (4) Only authorized personnel with respirators should enter the perimeter.



J. D. Ransdell

JDR/gri

cc: ECB Satellite✓
JDR Chron
JDR Desk File

LAM 016402

DPMC-13147

SHELL OIL COMPANY SHELL CHEMICAL COMPANY
DEER PARK MANUFACTURING COMPLEX

DATE JULY 13, 1978

TO D. O. CHRISMER
 J. G. MASSEY

FROM MANAGER SAFETY & INDUSTRIAL HYGIENE

SUBJECT SILICA

Silicosis is a chronic, progressive and disabling disease for which the only treatment is prevention. Appropriate prevention programs are necessary for our abrasive blasting operations which utilize sand or other materials containing free silica. While certain programs are already in effect, a more comprehensive program is herein proposed. The basic points of the proposed program are summarized below:

1. Expanded industrial hygiene monitoring program. (S&IH)

Monitor sandblasting operation quarterly in the Refinery sandblasting yard, with random periodic monitoring of field sandblasting operations involving Shell personnel.

2. Medical Examination Program (Maintenance North and South, Medical Dept.)

Instigate a medical examination program for all Shell employees involved in sandblasting work on a predictably routine basis (per attached recommendations from Corporate Medical). Maintenance North and South shall provide and maintain an evergreen list of these personnel, and Medical will implement the program based on these lists.

3. Respiratory Protection Improvement (Maintenance North)

Complete the audit and improvements (currently underway) of sandblasting air supply systems, for both sandblasting yard and field use. Communicate OSHA compliance status to appropriate personnel engaged in sandblasting operations.

Instigate an effective and ongoing enforcement program regarding the use of the NIOSH-approved breathing equipment.

4. Substitution (Maintenance North and South - proposed joint project). **LAM 016403**

Conduct a review of available non-silica or low-silica substitutes now available, and develop a program to reduce or eliminate use of high silica abrasives. This substitution program is not currently mandated, but affirmative action in this regard where practicable seems prudent and in keeping with the recommendations of the Corporate Medical Director.

5. Update "Silica" Safety Bulletin (S&IH)

The attached silica safety bulletin will be updated/republished, and will be the means to communicate the medical examination program to DPMC employees.

D. O. Chrismer
J. G. Massey

2

6. Contractors (S&IH)

The Safety Representative contractors will utilize the updated DPMC silica safety bulletin to advise contractors of Shell's program regarding silica/sandblasting. Also, contractors will be reminded that their procedures and safeguards must comply with OSHA.

Comments on this proposed action plan are requested by July 21.


J. L. Rivard

Attachments

cc - R. J. Swofford
H. J. Bettencourt
R. W. Bray/G. C. Anderson/R. P. Saxby/J. L. Isaacson
D. E. Miller
J. D. Ransdell
M. E. Davison
M. T. Anderson
R. V. Mattern
R. P. Frutiger
F. G. Reitz
R. L. Brunner - One Shell Plaza

JLR:rr

LAM 016404

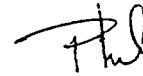
DPMC-13149

July 24, 1984

123

Tom Roberts

I don't want to beat a dead horse - but this comes from our neighbors.
Any comments on the proposed guideline I left with you?



P. J. SNYDER

LAM 016405

DPMC-13150

MEMORANDUM

ROHM AND HAAS TEXAS INCORPORATED

COPIES TO (name and title)

To Project Engineers.

From N.F. Quinn, Jr.

Date July 16, 1984

S.E. Anderson

E. Brink

R.N. Boruk

M.W. Carden

R.W. Griesser

J.E. Johnson

File: G-28

Subject Crystalline Silica -Based Sandblasting Sand

The use of crystalline silica-based sand for sandblasting is now prohibited in the Houston Plant due to the potential health hazards associated with dust from this material. Only non-silica sand such as Apache-Blast can be used.

Section D (Safety Conditions) of the job specification form and all applicable engineering standards have been revised to cover the non-silica sand requirement. This requirement should be emphasized in safety indoctrinations for all projects which involve sandblasting.

All exceptions to the non-silica sand requirement must have the Safety Director's approval.

The higher cost of non-silica sand should be included in estimates for all projects which involve sandblasting (see attached quotations).

N.F. Quinn Jr.

NFQ:vm
Attach

LAM 016406

6-15-84 CC: E. L. Smith
F. L. Smith
R. L. Smith
E. L. Smith

SPECIALTY SAND COMPANY

HOLSTON PLANT & WAREHOUSE
P. O. BOX 9877
HOLSTON, TEXAS 77015
436.9253

DEWEYVILLE PLANT & WAREHOUSE
P. O. BOX 377
DEWEYVILLE, TEXAS 77614
746.2456

June 8, 1984

Jasper Sims
Gene Nelson Inc.
P.O. Box 2143
Texas City, Tx. 77590

Re: E. L. Smith memo
of 5-30-84
(JLS)

Dear Jasper,

The following quote will cover blasting sand all grades,
in bulk and sacks.

F.O.B. Jobsite - Deer Park

Bulk -----	24 ton minimum -----	\$22.05 per ton
100 lb. bag -	240 per load -----	\$1.92 per bag
	420 per load -----	\$1.70 per bag
Pallet deposit -----		\$10.50 each
Damage -----		\$37.00 per hour (over 1 hour)

*Price includes the use of customer's air compressor for
unloading. An additional charge of \$.30 per ton will be added
when our truck-mounted compressor is used for unloading.

These prices are current. Our terms of payment are net
thirty (30) days. If you have any questions regarding this
quote you can reach me at 713-456-9553.

SILICA SAND

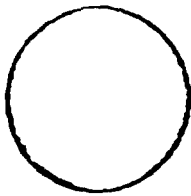
Yours truly,

M.A. Heckley
President

WAK/cs

LAM 016407

DPMC-13152



APACHE
Air Blast Abrasives

Apache Abrasives, Inc.

June 12, 1984

Mr. Jasper Simms
Gene Nelson
P.O. BOX 2143
Texas City, Texas 77590

Dear Mr. Simms:

As per your request I am quoting the following on our APACHE-BLAST material, F.O.B. job site, delivered in Houston:

Bulk:

10-50 Grade - 24 tons minimum	\$ 61.50/ton
16-50 Grade - 24 tons minimum	66.00 ton

Bags:

100 pound bags, 25 bags per pallet, F.O.B. our facility in Houston. (Full truck load 480 bags)

<u>10-50</u>	<u>16-50</u>	
\$ 4.30	4.55	300 bags or more
4.40	4.65	125-299 bags
4.60	4.85	25-124 bags
4.95	5.20	1-24 bags

Pallet deposit \$11.00/pallet, refundable if pallets returned.

(Customers responsibility to return to our facility).

Plastic pallet covers (4 mil) \$4.00 each

We thank you for your interest in our product. If we can be of further assistance please give us a call.

Sincerely,

APACHE ABRASIVES, INC.

Alicia G. Gonzalez
Alicia G. Gonzalez

NON-SILICA
SAND

LAM 016408

FOR INFORMATION WORD OF MOUTH ONLY - NOT A GUARANTEE
100% SATISFACTION GUARANTEE - NO EXCHANGE
APACHE ABRASIVES, INC. - 100% SATISFACTION GUARANTEE

DPMC-13153

Tom Roberts

7/2/88

THOUGHT IT MIGHT BE INTERESTING TO SEE WHO
DOES OR DOES NOT USE SILICA. AS EXPECTED, SOME DO
AND SOME DON'T, DEPENDING ON THEIR CO.'S PHILOSOPHY
ON CONTRACTORS AND WHETHER OR NOT THEY HAVE
RECOGNIZED IT AS A "PROBLEM".

Phil

P. J. SNYDER

LAM 016409

DPMC-13154

SILICA SANDBLASTING

Industrial Hygienist: Dupont - Beaumont

Using walnut shells instead of silica. Engineering found the sand removed too much metal.

Mgr. Safety: Dupont - Orange

They contract out sandblasting; they do not restrict against the use of silica sand. Industrial Hygiene monitoring establishes area to be roped off.

Safety Supervisor: Dupont - Victoria

They contract out sandblasting; do not restrict against the use of silica sand. For breathing air quality reasons an airline respirator is worn under the sandblast hood.

Industrial Hygienist: Union Carbide - Texas City

Apache blast or other non-silica grit is used in field. The manufacturer of their turbines requires crystalline silica or alumina blasting which is performed inside a sandblast room. Silica was eliminated because air monitoring studies showed over exposures 50 ft. and 300 ft. downwind.

Industrial Hygienist: Dupont - LaPorte

Do not permit crystalline silica for sandblasting for health. Dupont maintenance services did use silica inadvertently recently but management at this location supports not using it.

Environmental: Dupont - Deer Park

They allow silica sand to be used by Dupont maintenance contractors.

LAM 016410